

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously Presented: Allowed): An isolated nucleic acid encoding
UDP-N-acetylglucosamine: galactose- β 1,3-N-acetylgalactosamine- α -R /
N-acetylglucosamine- β 1,3-N-acetylgalactosamine- α -R β 1,6-N-acetylglucosaminyltransferase
(C2/4GnT) having the amino acid sequence SEQ ID NO: 2 or an enzymatically active
fragment thereof.

Claim 2 (Original: Allowed): An isolated nucleic acid as defined in claim 1, wherein said nucleic acid is DNA.

Claim 3 (Original: Allowed): An isolated nucleic acid as defined in claim 2, wherein said DNA is cDNA.

Claim 4 (Original: Allowed): An isolated nucleic acid as defined in claim 2, wherein said DNA is genomic DNA.

Claim 5 (Previously Presented: Allowed): An isolated nucleic acid encoding
UDP-N-acetylglucosamine: galactose- β 1,3-N-acetylgalactosamine- α -R/N-acetylglucosamine-
 β 1,3-N-acetylgalactosamine- α -R β 1,6-N-acetylglucosaminyl-transferase (C2/4GnT), wherein
said nucleic acid comprises the sequence of nucleotides 1-2319 in SEQ ID NO:1 or
sequence-conservative variants thereof.

Claims 6-7 (Cancelled)

Claim 8 (Previously Presented: Allowed): A nucleic acid vector comprising the nucleic acid of claim 1.

Claim 9 (Previously Presented: Allowed): A vector as defined in claim 8, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 1-2319 in SEQ ID NO:1 or sequence-conservative variants thereof.

Claim 10 (Original: Allowed): A vector as defined in claim 9, wherein said sequence encoding C2/4GnT is operably linked to a transcriptional regulatory element.

Claim 11 (Original: Allowed): A cell comprising a vector as defined in claim 8.

Claim 12 (Original: Allowed): A cell comprising a vector as defined in claim 10.

Claim 13 (Original: Allowed): A cell as defined in claim 12, wherein said cell is stably transfected with said vector.

Claim 14 (Original: Allowed): A cell as defined in claim 11, wherein said cell produces enzymatically active C2/4GnT.

Claim 15 (Original: Allowed): A cell as defined in claim 11, wherein said cell is selected from the group consisting of bacterial, yeast, insect, avian, and mammalian cells.

Claim 16 (Original: Allowed): A cell as defined in claim 14, wherein said cell is selected from the group consisting of bacterial, yeast, insect, avian, and mammalian cells.

Claim 17 (Original: Allowed): A cell as defined in claim 16, wherein said cell is Sf9.

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Claim 18 (Original: Allowed): A cell as defined in claim 16, wherein said cell is CHO.

Claim 19 (Cancelled)

Claim 20 (Cancelled)

Claim 21 (Previously Presented: Allowed): A method for the identification of DNA sequence variations in a region of the C2/4GnT gene, comprising the steps of:

- (i) isolating DNA from a patient;
- (ii) amplifying by PCR a segment of the patient's DNA using amplification primers capable of amplifying a subsequence of SEQ ID NO: 1, said subsequence consisting of a fragment of a nucleotide sequence selected from the group consisting of nucleotides 1-245, nucleotides 246-435, and nucleotides 436-2319 of SEQ ID NO: 1; and
- (iii) detecting the presence of DNA sequence variation in the amplified segment compared to said subsequence of SEQ ID NO: 1 by DNA sequencing or single strand conformational polymorphism (SSCP).

Claim 22 (Previously Presented: Allowed): An isolated nucleic acid as defined in claim 1, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 496-1812 in SEQ ID NO:1 or sequence-conservative variants thereof.

Claim 23 (Previously Presented: Allowed): An isolated nucleic acid as defined in claim 1, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 634-1812 in SEQ ID NO:1 or sequence-conservative variants thereof.

Claim 24 (Previously Presented: Allowed): A method for screening for DNA sequence variations in a region of the human C2/4GnT gene comprising the steps of:

(i) amplifying a segment of genomic DNA obtained from a human subject, using amplification primers capable of amplifying a subsequence of SEQ ID NO: 1, said subsequence consisting of a fragment of a nucleotide sequence selected from the group consisting of nucleotides 1-245, nucleotides 246-435, and nucleotides 436-2319 of SEQ ID NO: 1; and

(ii) comparing the sequence of the amplified segment with said subsequence of SEQ ID NO: 1 and identifying the differences between the sequence of said segment and said subsequence of SEQ ID NO:1.

Claim 25 (Previously Presented: Allowed): A nucleic acid vector comprising the nucleic acid of claim 22.

Claim 26 (Previously Presented: Allowed): A nucleic acid vector comprising the nucleic acid of claim 23.

Claim 27 (Cancelled)

Claim 28 (Previously Presented: Allowed): A cell comprising a vector as defined in claim 25.

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Claim 29 (Previously Presented: Allowed): A cell comprising a vector as defined in claim 26.

Claim 30 (Cancelled)